

APPLICATION NO.: 10/666,770
OCT 26 2006 ATTORNEY DOCKET NO. 10030322-1
Page 6 of 13**REMARKS**

This is a full and timely response to the non-final Office Action mailed July 26, 2006. Upon entry of the foregoing amendments, claims 1-20 are pending in the application. Claims 1, 8 and 11 have been amended. Claim 20 has been added. The subject matter of amended independent claims 1, 8 and 11 is at least supported in Applicants' originally submitted FIG. 2 and the related detailed description of Applicants' specification in at least paragraphs 23 through 27. Accordingly, no new matter is added to the present application. In light of the foregoing amendments and following remarks, Applicants request reconsideration of the application and pending claims.

I. Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 14 and 15 are allowable. However, Applicants respectfully request that the Examiner consider the following remarks regarding pending claims 1-20.

II. Claim Rejections Under 35 USC § 103 – Claims 1-13 and 16-19**A. Statement of the Rejections**

Claims 1, 2, 4-8, 11-13 and 16-19 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,264,740 to Wright (hereafter *Wright*) in view of Eklow et al. ("IEEE 1149.6: A Boundary-Scan Standard for Advanced Digital Networks," IEEE Design & Test of Computers, Special ITC Section, 2003, pgs. 76-83.) (hereafter *Eklow*.)

Claims 3, 9 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Wright* and *Eklow* in view of U.S. Patent No. 5,610,545 to Jenkins et al. (hereafter *Jenkins*).

B. Discussion of the Rejections

In order for a claim to be properly rejected under 35 U.S.C. § 103, the combined teachings of the prior art references must suggest all features of the claimed invention to one of ordinary skill in the art. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881

(C.C.P.A. 1981). To establish a *prima facie* case of obviousness, the prior art (or references when combined) must teach or suggest all claim features.

1. Claims 1, 2 and 4-7

Applicants' independent claim 1, as amended, includes at least one feature that is not disclosed, taught, or suggested by the proposed combination. Specifically, the proposed combination fails to disclose, teach or suggest at least "a programmable hysteresis circuit coupled to at least one of said comparator inputs and the output, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test."

In contrast with Applicants' claimed Boundary-Scan test receiver, *Wright* discloses a programmable voltage comparator having a programmable hysteresis function for adjusting the comparator output switching thresholds relative to first and second comparator input voltage variables. (See *Wright*, Summary of the Invention, column 1, lines 58-62.) *Wright* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the output configured to receive multiple input control signals responsive to a condition on the board under test.

Also in contrast with Applicants' claimed Boundary-Scan test receiver, *Eklow* discloses a static self-referenced (i.e., non-programmable) hysteretic comparator (See *Eklow* FIG. 2). Consequently, the proposed combination of *Wright* in view of *Eklow* fails to disclose, teach or suggest at least "a portion of the programmable hysteresis circuit coupled to at least one of said comparator outputs is configured to receive multiple input control signals responsive to a condition on the board under test."

Thus, each feature of the Applicants' claimed Boundary-Scan test receiver is not disclosed in the cited combination. As a result, a *prima facie* case of obviousness has not been established against Applicants' independent claim 1. Accordingly, Applicants respectfully submit independent claim 1, as amended, is allowable over the proposed combination and respectfully request that the rejection of claim 1 be withdrawn.

Because independent claim 1 is allowable, dependent claims 2 and 4-7, which depend directly or indirectly from claim 1, are also allowable. See *In re Fine*, 837, F.2d

1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Accordingly, Applicants respectfully request that the rejection of claims 2 and 4-7 also be withdrawn.

2. Claim 8

Applicants' independent claim 8, as amended, includes at least one feature that is not disclosed, taught, or suggested by the proposed combination. Specifically, the proposed combination fails to disclose, teach or suggest at least "a programmable hysteresis circuit coupled to at least one input and the output of each comparator, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test."

In contrast with Applicants' claimed Boundary-Scan test receiver, *Wright* discloses a programmable voltage comparator having a programmable hysteresis function for adjusting the comparator output switching thresholds relative to first and second comparator input voltage variables. (See *Wright*, Summary of the Invention, column 1, lines 58-62.) *Wright* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the comparator output configured to receive multiple input control signals responsive to a condition on the board under test.

Also in contrast with Applicants' claimed Boundary-Scan test receiver, *Eklow* discloses a static self-referenced (i.e., non-programmable) hysteretic comparator (See *Eklow* FIG. 2). *Eklow* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the comparator output configured to receive multiple input control signals responsive to a condition on the board under test.

Thus, each feature of the Applicants' claimed Boundary-Scan test receiver is not disclosed in the cited combination. As a result, a *prima facie* case of obviousness has not been established against Applicants' independent claim 8. Accordingly, Applicants respectfully submit independent claim 8, as amended, is allowable over the proposed combination and respectfully request that the rejection of claim 8 be withdrawn.

3. Claims 11-13 and 16-19

Applicants' independent claim 11, as amended, includes at least one step that is not disclosed, taught, or suggested by the proposed combination. Specifically, the proposed combination fails to disclose, teach or suggest at least "in response to said at least one operating condition, programming hysteresis circuits of Boundary-Scan test receivers in the board under test, wherein programming comprises the application of at least one of a data input signal, a first control signal that determines an active path through the programmable hysteresis circuit, a second control signal that directs operation of a data capture device, and a third control signal that directs operation of an update device."

In contrast with Applicants' claimed Boundary-Scan test method, *Wright* discloses a programmable voltage comparator having a programmable hysteresis function for adjusting the comparator output switching thresholds relative to first and second comparator input voltage variables. (See *Wright*, Summary of the Invention, column 1, lines 58-62.) *Wright* is entirely silent regarding programming via the application of at least one of a data input signal, a first control signal that determines an active path through the programmable hysteresis circuit, a second control signal that directs the operation of a data capture device, and a third control signal that directs operation of an update device.

Also in contrast with Applicants' claimed Boundary-Scan test method, *Eklow* discloses a static self-referenced (i.e., non-programmable) hysteretic comparator (See *Eklow* FIG. 2). Consequently, the proposed combination of *Wright* in view of *Eklow* fails to disclose, teach or suggest at least "in response to said at least one operating condition, programming hysteresis circuits of Boundary-Scan test receivers in the board under test, wherein programming comprises the application of at least one of a data input signal, a first control signal that determines an active path through the programmable hysteresis circuit, a second control signal that directs operation of a data capture device, and a third control signal that directs operation of an update device."

Thus, each step of the Applicants' claimed Boundary-Scan test method is not disclosed in the cited combination. As a result, a *prima facie* case of obviousness has not been established against Applicants' independent claim 11. Accordingly,

Applicants respectfully submit independent claim 11, as amended, is allowable over the proposed combination and respectfully request that the rejection of claim 11 be withdrawn.

Because independent claim 11 is allowable, dependent claims 12-19, which depend directly or indirectly from claim 11, are also allowable. *See In re Fine, supra*. Accordingly, Applicants respectfully request that the rejection of claims 12-19 also be withdrawn.

4. Claim 3

Applicants' dependent claim 3 includes at least one feature that is not disclosed, taught, or suggested by the proposed combination of *Wright* and *Eklow* in view of *Jenkins*. Specifically, the proposed combination fails to disclose, teach or suggest at least "a programmable hysteresis circuit coupled to at least one of said comparator inputs and the output, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test."

In contrast with Applicants' claimed Boundary-Scan test receiver, *Wright* discloses a programmable voltage comparator having a programmable hysteresis function for adjusting the comparator output switching thresholds relative to first and second comparator input voltage variables. (See *Wright*, Summary of the Invention, column 1, lines 58-62.) *Wright* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to at least one of said comparator outputs configured to receive multiple input control signals responsive to a condition on the board under test.

Also in contrast with Applicants' claimed Boundary-Scan test receiver, *Eklow* discloses a static self-referenced (i.e., non-programmable) hysteretic comparator (See *Eklow* FIG. 2). *Eklow* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to at least one of said comparator outputs configured to receive multiple input control signals responsive to a condition on the board under test.

Moreover, *Jenkins* discloses a method for providing programmable hysteresis levels that includes producing output signals when an input signal crosses respective

set points and establishing a hysteresis in output signals. (See *Jenkins*, Abstract.) *Jenkins* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test.

Consequently, the proposed combination of *Wright* and *Eklow* in view of *Jenkins* fails to disclose, teach or suggest at least "a programmable hysteresis circuit coupled to at least one of said comparator inputs and the output, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test."

Thus, each feature of the Applicants' claimed Boundary-Scan test receiver is not disclosed in the cited combination. As a result, a *prima facie* case of obviousness has not been established against Applicants' dependent claim 3. Accordingly, Applicants respectfully submit dependent claim 3 is allowable over the proposed combination and respectfully request that the rejection of claim 3 be withdrawn.

5. Claims 9 and 10

Applicants' dependent claims 9 and 10 include at least one feature that is not disclosed, taught, or suggested by the proposed combination of *Wright* and *Eklow* in view of *Jenkins*. Specifically, the proposed combination fails to disclose, teach or suggest at least "a programmable hysteresis circuit coupled to at least one input and the output of each comparator, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test."

In contrast with Applicants' claimed Boundary-Scan test receiver, *Wright* discloses a programmable voltage comparator having a programmable hysteresis function for adjusting the comparator output switching thresholds relative to first and second comparator input voltage variables. (See *Wright*, Summary of the Invention, column 1, lines 58-62.) *Wright* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test.

Also in contrast with Applicants' claimed Boundary-Scan test receiver, *Eklow* discloses a static self-referenced (i.e., non-programmable) hysteretic comparator (See

Eklow FIG. 2). *Eklow* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test.

Moreover, *Jenkins* discloses a method for providing programmable hysteresis levels that includes producing output signals when an input signal crosses respective set points and establishing a hysteresis in output signals. (See *Jenkins*, Abstract.) *Jenkins* is entirely silent regarding a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test.

Consequently, the proposed combination of *Wright* and *Eklow* in view of *Jenkins* fails to disclose, teach or suggest at least “a programmable hysteresis circuit coupled to at least one input and the output of each comparator, wherein a portion of the programmable hysteresis circuit coupled to the output is configured to receive multiple input control signals responsive to a condition on the board under test.”

Thus, each feature of the Applicants’ claimed Boundary-Scan test receiver is not disclosed in the cited combination. As a result, a *prima facie* case of obviousness has not been established against Applicants’ dependent claims 9 and 10. Accordingly, Applicants respectfully submit dependent claims 9 and 10 are allowable over the proposed combination and respectfully request that the rejection of claims 9 and 10 be withdrawn.

III. New Claim 20

Added claim 20 depends directly from allowable independent claim 1. Accordingly, Applicants respectfully submit that claim 20 is allowable. See *In re Fine*, *supra*.

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CONCLUSION

For at least the reasons set forth above, Applicants respectfully submit that pending claims 1-20 are allowable over the cited art of record and the present application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully solicited. Should the Examiner have any comments regarding the Applicants' response, Applicants requests that the Examiner telephone Applicants' undersigned attorney.

Respectfully submitted,

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